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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,407	12/11/2003	Abdelaziz Ikhlef	GEMS8081.201	1406
27061	7590	11/29/2006	EXAMINER	
ZIOLKOWSKI PATENT SOLUTIONS GROUP, SC (GEMS)			KAO, CHIH CHENG G	
136 S WISCONSIN ST			ART UNIT	PAPER NUMBER
PORT WASHINGTON, WI 53074			2882	

DATE MAILED: 11/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/707,407

Applicant(s)

IKHLEF ET AL.

Examiner

Chih-Cheng Glen Kao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2006.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9,12-15 and 18-30 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-7,9,12-15 and 18-30 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 11 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Allowable Subject Matter

2. The indicated allowability of claims 1-7, 15, 18-26, and 28-30 is withdrawn in view of the newly discovered reference(s) to Guyot (US 4948978). Rejections based on the newly cited reference(s) follow.

Claim Objections

3. Claims 15, 18, 19, and 28 are objected to because of the following informalities, which appear to be minor draft errors including grammatical and/or lack of antecedent basis problems.

In the following format (location of objection; suggestion for correction), the following correction(s) may obviate the objection(s): (claim 15, line 6, "project high"; inserting - a- - before "high").

Claims 18, 19, and 28 are objected to by virtue of their dependency. For purposes of examination, the claims have been treated as such. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7, 9, 12-14, 20-27, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Possin et al. (US 5430298) in view of Guyot (US 4948978).

5. Regarding claim 1, Possin et al. discloses an apparatus comprising a scintillator array having a plurality of scintillators (fig. 1, #112) arranged along a first plane, a photodiode array having a plurality of photodiodes (fig. 1, #124) arranged along a second plane different from the first plane and parallel to the first plane, and configured to detect illumination of the scintillator array (fig. 1, #112), the first plane and the second plane orthogonal to a direction of x-ray (col. 1, line 15) incidence on the scintillator array (fig. 1, #112), and an optical mask (fig. 1, #180) arranged and extended in major part along a third plane parallel to the first and the second planes, and disposed between the scintillator array (fig. 1, #112) and the photodiode array (fig. 1, #124) without encroachment upon any of the first plane or the second plane, the optical mask (fig. 1, #180) configured to reduce optical transference between a scintillator and a neighboring photodiode (title).

However, Possin et al. fails to disclose an optical mask located closer to a scintillator than a photodiode array.

Guyot teaches an optical mask (fig. 2, #15, and col. 6, lines 27-30) located closer to a scintillator (fig. 2, #11, and col. 5, line 44) than a photodiode array (fig. 2, D, and col. 4, lines 39-40).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to include the apparatus of Possin et al. with the closer optical mask of Guyot, since one would have been motivated to make such a modification to improve the signal-to-noise ratio (col. 3, lines 23-26) as implied from Guyot.

6. Regarding claims 2 and 3, Possin et al. further discloses wherein the optical mask includes a grid of intersecting optical inhibitor elements (fig. 1, #180), wherein the grid is dimensionally equivalent to the scintillator array (fig. 1, #112) and the photodiode array (fig. 1, #124).

7. Regarding claim 4, Possin et al. further discloses wherein the optical mask is defined by a plurality of parallel optical inhibitor elements (fig. 1, #180) extending transversely along a width of the photodiode array (fig. 1, #124).

8. Regarding claim 5, Possin et al. further discloses wherein the optical mask is formed of optical absorbing material (col. 5, lines 26-28).

9. Regarding claim 6, Guyot further teaches wherein the optical mask is formed of optical reflecting material (col. 7, lines 4-6).

10. Regarding claim 7, Possin et al. further discloses wherein each scintillator (fig. 1, #112) / photodiode (fig. 1, #124) combination defines a detector cell and wherein the optical mask (fig. 1, #180) is configured to reduce cross-talk between adjacent cells (title).

11. Regarding claim 30, Possin et al. further discloses a first scintillator and a second scintillator (fig. 1, #112) positioned adjacently to one another and distanced from one another by a given width, a first photodiode (fig. 1, #124) operationally aligned to detect illumination of the first scintillator (fig. 1, #112) and a second photodiode (fig. 1, #124) operationally aligned to detect illumination of the second scintillator (fig. 1, #112), at least one mask element (fig. 1, #180) of optically absorbing material (col. 5, lines 26-28) arranged and extended in major part along a plane disposed between the first and second scintillators (fig. 1, #112) and the first and the second photodiodes (fig. 1, #124) to reduce optical transference between the first scintillator and the second photodiode and the second scintillator and the first photodiode (title), the at least one mask element (fig. 1, #180) having a width that exceeds the given width separating the first and the second scintillators (fig. 1, #112) from one another, wherein the plane avoids intersection with any of the first scintillator, the second scintillator (fig. 1, #112), the first photodiode, or the second photodiode (fig. 1, #124), wherein the plane comprises a third plane (fig. 1, at #180), wherein the first and the second scintillators (fig. 1, #112) are arranged along a first plane, wherein the first and the second photodiodes (fig. 1, #124) are arranged along a second plane different from the first plane and parallel to the first plane (fig. 1, at #112), wherein the first plane and the second plane are orthogonal to a direction of x-ray (col. 1, line 15) incidence on the

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first and the second scintillators (fig. 1, #112), wherein the third plane (fig. 1, at #180) is parallel to the first (fig. 1, at #112) and the second planes (fig. 1, at #124), and wherein the at least one mask element (fig. 1, #180) of optically absorbing material (col. 5, lines 26-28) is arranged and extended in major part along the third plane parallel to the first and the second planes to reduce optical transference between the first scintillator and the second photodiode and the second scintillator and the first photodiode (title), and disposed between the first and the second scintillators (fig. 1, #112) and the first and the second photodiodes (fig. 1, #124) without encroachment upon any of the first plane or the second plane.

12. Regarding claim 9, Possin et al. further discloses wherein the first and the second scintillators (fig. 1, #112) are spaced from one another by a lateral gap (fig. 1, #115).

13. Regarding claim 12, Possin et al. further discloses wherein each scintillator (fig. 1, #112) is spaced from its corresponding photodiode (fig. 1, #124) by a vertical gap (fig. 1, #170).

14. Regarding claim 13, Possin et al. further discloses wherein each mask element (fig. 1, #180) has a thickness at least equal to a height of the vertical gap (fig. 1, #170).

15. Regarding claim 20, Possin et al. further discloses a method comprising the steps of providing a cellular arrangement of scintillators (fig. 1, #112), providing a cellular arrangement of photodiodes (fig. 1, #124), each photodiode (fig. 1, #124) configured to detect illumination of a corresponding scintillator (fig. 1, #112), providing an optical cross-talk mask (fig. 1, #180), and

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arranging the cellular arrangement of scintillators (fig. 1, #112), the cellular arrangement of photodiodes (fig. 1, #124), and the optical cross-talk mask (fig. 1, #180) in a multi-planar stack wherein each of the cellular arrangements (fig. 1, #112 and 124) and the optical cross-talk mask (fig. 1, #180) are arranged orthogonal to a central axis of x-ray (col. 1, line 15) incidence on the cellular arrangement of scintillators (fig. 1, #112) such that the optical cross-talk mask (fig. 1, #180) is sandwiched between the cellular arrangement of scintillators (fig. 1, #112) and the cellular arrangement of photodiodes (fig. 1, #124), such that in the multi-planar stack a plane of the cellular arrangement of scintillators (fig. 1, #112), a plane of the cellular arrangement of photodiodes (fig. 1, #124), and a plane of the optical cross-talk mask (fig. 1, #180) comprise a substantially same major orientation.

16. Regarding claim 21, Possin et al. further discloses wherein the optical cross-talk mask includes a cellular arrangement of mask elements (fig. 1, #180).

17. Regarding claim 22, Possin et al. further discloses wherein the step of providing an optical cross-talk mask (fig. 1, #180) includes the step of forming a grid of light-absorbing elements (col. 5, lines 26-28).

18. Regarding claim 23, Guyot further teaches wherein the step of providing an optical cross-talk mask (fig. 2, #15) includes the step of forming a grid of light-reflective elements (col. 7, lines 4-6).

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19. Regarding claims 14 and 24, Possin et al. further discloses wherein the at least one mask is fabricated of at least black polyamide (col. 5, lines 32-40).

20. Regarding claim 25, Possin et al. further discloses wherein the optical cross-talk mask (fig. 1, #180) is constructed to reduce cross-talk (title) between a scintillator (fig. 1, #112) and a neighboring photodiode (fig. 1, #124).

21. Regarding claim 26, Possin et al. further discloses wherein at least a majority of the optical mask (fig. 1, #180) is disposed adjacent to the scintillator array (fig. 1, #112).

22. Regarding claim 27, Possin et al. further discloses wherein a portion of the mask element (fig. 1, #180) is disposed adjacent to the first and second scintillators (fig. 1, #112).

23. Regarding claim 29, Possin et al. further discloses wherein the step of arranging includes the step of arranging the cellular arrangement of scintillators (fig. 1, #112), the cellular arrangement of photodiodes (fig. 1, #124), and the optical cross-talk mask (fig. 1, #180) in the multi-planar stack such that each of the cellular arrangements (fig. 1, #112 and 124) and the optical cross-talk mask (fig. 1, #180) are arranged orthogonal to the central axis of x-ray (col. 1, line 15) incidence on the cellular arrangement of scintillators (fig. 1, #112) such that at least a majority of the optical cross-talk mask (fig. 1, #180) is disposed adjacent to the cellular arrangement of scintillators (fig. 1, #112).

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24. Claims 15, 19, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Possin et al. in view of Guyot and Mattson et al. (US 6553092).

For purposes of being concise, Possin et al. in view of Guyot suggests the system as recited above.

However, Possin et al. fails to disclose a rotatable gantry having a bore centrally disposed therein, a table movable fore and aft through the bore and configured to position a subject for CT data acquisition, a high frequency electromagnetic energy projection source positioned within the rotatable gantry and configured to project a high frequency electromagnetic energy fan beam toward the subject, and a detector array disposed within the rotatable gantry and configured to detect high frequency electromagnetic energy projected by the projection source and impinged by the subject.

Mattson et al. teaches a rotatable gantry (fig. 1, #10) having a bore centrally disposed therein (fig. 1, #14), a table movable fore and aft (fig. 1, #12) through the bore (fig. 1, #14) and configured to position a subject for CT data acquisition (fig. 1, #20 and 30), a high frequency electromagnetic energy projection source (fig. 1, #16) positioned within the rotatable gantry (fig. 1, #10) and configured to project a high frequency electromagnetic energy fan beam toward the subject (fig. 1, subject to be placed on #12), and a detector array (fig. 1, #20) disposed within the rotatable gantry (fig. 1, #10) and configured to detect high frequency electromagnetic energy projected by the projection source (fig. 1, #16) and impinged by the subject (fig. 1, subject to be placed on #12).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to include the system of Possin et al. as modified above with the CT system

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components of Mattson et al., since one would have been motivated to make such a modification for obtaining multiple projections more quickly and easily for CT imaging (fig. 1) as implied from Mattson et al.

25. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Possin et al., Guyot, and Mattson et al. as applied to claim 15 above, and further in view of Rushbrooke et al. (US 5682411).

Possin et al. as modified above suggests a system as recited above.

However, Possin et al. fails to disclose silicon.

Rushbrooke et al. teaches silicon (col. 2, lines 12-17).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to include the system of Possin et al. as modified above with the silicon of Rushbrooke et al., since it would have been within the general skill of a worker in the art to select a known material on the basis of its suitability. One would have been motivated to make such a modification to reduce crosstalk (col. 2, lines 15-17) as implied from Rushbrooke et al.

Response to Arguments

26. Applicant's arguments with respect to claims 1-7, 9, 12-15, and 18-30 have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER